



# CAN-Repeater CRep Opto

## Special Features

- Galvanic separation of CAN segments
- Protocol transparent, the CAN error handling is preserved
- Extended error suppression, separation of faulty segments
- Wide power supply input range
- Assembly rail fixing, connection by DSub-9 plugs

## Description

The galvanic decoupling CAN repeater CRep Opto transmits and amplifies CAN signals in a protocol transparent way. Both CAN connections behave like one single physical CAN node. CRep Opto allows the design of flexible wiring topologies. Star and tree structures as well as stub lines can be realized. By selection of the most favourable network topology for the application needs the installation costs can be lowered.

The maximum data rate can be increased by use of CRep Opto and a suitable network structure. An increase in the number of nodes in a CAN network is possible through separation into sub networks, each of them connected by CRep Opto. Each sub network can manage a maximum number of CAN nodes only restricted by the transceiver driver capabilities. With transmission over long distances CRep Opto allows signal recovering. Through the galvanic separation of the bus segments CAN sections with differing ground potential can be connected. For the most common occurring errors the integrated error suppression reduces the influence of faulty segments onto intact sections.

## Technical Data

### Layout and Connection

CRep Opto devices include 2 CAN-Segments fed to a male and a female plug of type D-Sub 9. The plugs carry the CAN signals and the supply voltage. The following table shows the function of the internally connected CAN interface.

| Pin | Name  | Function                       |
|-----|-------|--------------------------------|
| 2   | CAN_L | CAN_L bus line (dominant low)  |
| 3   | GND   | Ground line                    |
| 7   | CAN_H | CAN_H bus line (dominant high) |
| 9   | V+CAN | Power supply +24V              |

### Limiting Values

| Parameter                              | Minimum | Maximum | Unit |
|--|---------|---------|------|
| Storage temperature                    | - 20    | + 80    | °C   |
| Operating temperature                  | 0       | + 60    | °C   |
| Supply voltage                         | - 100   | + 35    | V    |
| Voltage on bus connections             | - 30    | + 30    | V    |
| Admissible power consumption (at 60°C) | –       | 2000    | mW   |

Any (also temporary) stress in excess of the limiting values may cause permanent damage on CRep Opto and other connected devices. Exposure to limiting conditions for extended periods may affect the reliability and shorten the life cycle of the device.

### Nominal Values

| Parameter                                     | Minimum | Typical | Maximum | Unit |
|---|---------|---------|---------|------|
| Current consumption (running idle)            | –       | 30      | –       | mA   |
| Current consumption (250kBit/s, 100% busload) | –       | 40      | –       | mA   |
| Supply voltage                                | 10      | 24      | 30      | V    |
| Propagation delay                             | –       | 125     | 200     | ns   |

All values, unless otherwise specified, refer to a supply voltage of 24V and an environmental temperature of 20°C.